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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/543,191

08/29/2005

Klaus Dolle

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EXAMINER

CORDRAY, DENNIS R

ART UNIT

PAPER NUMBER

1791

NOTIFICATION DATE

DELIVERY MODE

02/14/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/543,191	Applicant(s) DOLLE, KLAUS	
	Examiner DENNIS CORDRAY	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 35-82 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 35-82 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 July 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/24/2006</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 35-82 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 35 recites "creating a fibrous suspension" and "loading fibers contained in a fibrous suspension." It is not clear if the first fibrous suspension is the same as or different from the second fibrous suspension.

Claims 41, 42, 44-48, 62-65, 67, 72, 73 and 82 all recite "fibrous suspension" and all depend ultimately from Claim 35. It is not clear in each case which fibrous suspension in Claim 35 is being referenced.

Claim 60 recites a limitation on the diameter of particles with a scalenohedral form. Since scalenohedral particles are not spherical or disc-shaped, it is not clear what is meant by a diameter.

Claims 62 and 63 recite "the fibrous suspension guided through the treatment unit." It is not clear how the suspension is guided through the treatment unit or if the phrase is related to the process recited Claim 40 of feeding the fibrous suspension to the treatment unit.

Claim 68 recites "establishing the pH value" in reference to Claim 66 but fails to recite where the pH value is being established.

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Claim 81 recites washing out free calcium carbonate not deposited on or in the fibers in reference to the method of Claim 35 of directly loading fibers. It is not clear if directly loading fibers comprises depositing calcium carbonate on or in the fibers or if a different process of depositing calcium carbonate is intended.

Claim 55, 76 and 78 recite the limitation "the two plates" in Claim 53. There is insufficient antecedent basis for this limitation in the claims.

Claim 61 recites the limitation "the treatment unit" in Claim 53. There is insufficient antecedent basis for this limitation in the claim. Claim 63 depends from Claim 61 and inherits the lack of antecedent basis therefrom.

Claim 68 recites the limitation "the pH value" in Claim 66. There is insufficient antecedent basis for this limitation in the claim.

Claim 71 recites the limitation "the energy" in Claim 69. There is insufficient antecedent basis for this limitation in the claim.

Claim 73 recites the limitation "the diluted fibrous suspension" in Claim 71. There is insufficient antecedent basis for this limitation in the claim.

Claim 75 recites the limitation "the circumferential speed" in Claim 73. There is insufficient antecedent basis for this limitation in the claim.

Claim 77 recites the limitation "the gap" in Claim 75. There is insufficient antecedent basis for this limitation in the claim.

The remaining claims ultimately depend from Claim 35 and inherit the indefiniteness thereof.

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Examiner's Note

Claims 55, 61, 63, 68, 71, 73 and 75-78 are rejected herein for improper antecedent basis and the Examiner has elected not to guess the intended dependency of the claims to establish proper antecedent basis. The claims cannot be examined with respect to the prior art as currently presented.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this

Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 35-37 are rejected under 35 U.S.C. 102(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Christian (FR 2821094, DERWENT Abstracted Pub No: WO 200266736 A (patent family of FR 2821094) enclosed).

Christian discloses in situ precipitation of calcium carbonate in the presence of paper fibers in a tissue making process followed by immediate draining of the pulp (within 10 seconds), thus the precipitation is inherently carried out in an online process or, at least, it would have been obvious to one of ordinary skill in the art that the process is online due to the very short timeframe involved. Since the fibers are immediately drained, a fibrous suspension during the precipitation reaction is implicitly disclosed or, At least, would have been obvious.

Claims 35-40, 42-54, 56-60, 62, 64-66, 69-70, 72, 74 and 79-82 are rejected under 35 U.S.C. 103(a) as unpatentable over Doelle et al (6413365) in view of Christian and as evidenced by Bleakley et al (5833747).

Claims 35-37 and 82: Doelle et al discloses a process of loading fibers in a fiber suspension for use in papermaking comprising directly loading the fibers in suspension in a continuous process with a CaCO_3 filler through a chemical precipitation reaction and discharging the fibers for further use or for downstream processing, such as in a papermaking machine or chest (Abs; col 2, lines 5-6 and 18-21; col 4, lines 63-67).

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Doelle et al does not explicitly disclose an online process in a tissue preparation line. However, Doelle et al does teach that prior art fiber loading processes were batch processes and required that the chemically loaded suspension be transferred to a holding tank for ultimate use in a papermaking machine, and that the need exists for a process having an adequate output for today's papermaking process (col 1, lines 50-61). From the disclosure of a continuous process, discharge for further processing in a machine and providing a loaded fiber suspension sufficient for use in a papermaking machine, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the fiber loading process of Doelle et al online in a papermaking process. Tissues are typical paper products and it would further have been obvious to use the process of Doelle et al in a tissue preparation line.

Alternatively, Christian discloses in situ precipitation of calcium carbonate in the presence of paper fibers in a tissue making process followed by immediate draining of the pulp (within 10 seconds).

The art of Doelle et al, Christian and the instant invention is analogous as pertaining to the loading of fibers by precipitation of calcium carbonate and making paper therefrom. It would have been obvious to one of ordinary skill in the art to incorporate the fiber loading process of Doelle et al online in the tissue preparation line of Christian to preserve the form of the precipitated calcium carbonate. Making a tissue product would have been obvious. Herein, all claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in

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their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

Claims 38-40, 42-45, 47, 54, 70 and 74: Doelle et al discloses feeding a fiber suspension containing lime (e.g.-calcium oxide or calcium hydroxide) into a gas ring in a housing, introduced carbon dioxide gas to initiate precipitation of the calcium carbonate crystals. The lime preferably includes calcium hydroxide at a concentration of between 0.1% and 60% dry weight before being mixed with the fiber suspension. Absent evidence of unexpected results, supplying the lime in dry form or in liquid form (such as milk of lime) would have been obvious as forms of lime well known in the art. Mixing energy is not provided in the gas ring where the precipitation reaction occurs. The calcium carbonate crystals are then distributed in the fiber suspension by passing the suspension through a rotor and stator, which corresponds to the claimed treatment unit (col 2, lines 5-17; col 3, lines 64-67; col 4, lines 13-24 and 30-53). The rotor and stator are positioned in an opposed in relationship, each having an outside diameter of between 0.5 and 2 meters and having a gap between them of between 0.5 and 100 mm, preferably between 25 and 75 mm. The rotor rotates with respect to the stator with an outside tangential velocity between 20 and 100 m/s, preferably between 40 and 60 m/s. The rotor and stator include a plurality of teeth in known manner (col 3, lines 28-44). While a fluffer, refiner, or disperger is not explicitly recited, the description of the rotor and stator assembly disclosed by Doelle et al is of a fluffer, refiner or disperger type apparatus or, at least, such would have been

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obvious to one of ordinary skill in the art. The energy provided is between 0.3 and 8 kWh/ton or between 0.5 and 4 kWh/ton (col 6, claims 27-28).

Claims 46, 48, 62 and 72: Doelle et al discloses that the fiber suspension has a consistency between approximately 2.5% and 60%, preferably between approximately 15% and 35% at the inlet (when fed to the treatment unit). When passing through the rotor and stator assembly, the consistency is between approximately 0.1% and 50%, preferably between approximately 2.5% and 30% (col 4, lines 13-19 and 59-63). With a feed consistency of approximately 2.5% and above and a consistency at the rotor and stator of approximately 0.1% and above, in some embodiments the fiber suspension is diluted or, at least, dilution would have been obvious to one of ordinary skill in the art. Alternatively, Doelle et al discloses that the consistency of the loaded fiber suspension is varied at the outlet using dilution water (col 2, lines 28-30; col 4, lines 9-12).

Claims 49, 50, 64-66 and 69: Doelle et al discloses that the carbon dioxide gas is added at a temperature between approximately -15 °C and 120 °C, preferably between approximately 20 °C and 90 °C and at a pressure of between approximately 0.1 and 6 bar, preferably between approximately 0.5 and 3 bar. The fiber suspension has a pH of between approximately 6.0 and 10, preferably between approximately 7.0 and 8.5 (col 4, lines 30-38). Since the process is a continuous process of loading the fibers, it would have been obvious to one of ordinary skill in the art to maintain a constant supply of carbon dioxide into the fibrous suspension as one of the reactants.

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Claims 51-53 and 56-60: Doelle et al discloses that the temperature and pressure of the carbon dioxide and the reaction time within the gas ring determine the type of calcium carbonate crystals formed, thus the particle dimensions. The calcium carbonate crystals are rhombohedral, scalenohedral or spherical in shape with a size distribution between approximately 0.5 and 5 μm , preferably between approximately 0.3 and 2.5 μm (col 4, lines 45-53).

Rhombohedral crystals have an approximately equal length and diameter, while scalenohedral crystals are shaped like double, two-pointed pyramids having a length:diameter ratio of about 4:1 (if evidence is needed, see Bleakley et al, col 1, lines 34-42), thus a particle with a length from 0.5 to 5 μm would have a diameter from 0.125 to 1.25 μm . While not explicitly disclosed, it would have been obvious to one of ordinary skill in the art to obtain the claimed edge length in order to obtain particles within the disclosed size distribution.

Claims 79 and 80: Doelle et al claims a reaction time of between approximately 0.001 and 60 seconds, or of between approximately 0.01 and 1 minute (col 6, claim 25; cols 6-8, claim 32).

Claim 81: While not explicitly disclosed by Doelle et al, the calcium carbonate not deposited on the fibers will be washed out during the draining of the fibrous suspension to make paper or, at least, one of ordinary skill in the art would have found it obvious that free calcium carbonate will be washed out.

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Claims 41 and 67 are rejected under 35 U.S.C. 103(a) as unpatentable over Doelle et al in view of Christian and further in view of Rheims et al (US 2002/0007925).

Doelle et al and Christian do not disclose loading the fibers before feeding the suspension to the treatment unit. Doelle et al and Christian do not disclose controlling the pH value by regulating or controlling the supply of carbon dioxide so that substantially all base materials are converted to reaction products.

Rheims et al (US 2002/0026989) discloses a process for loading fibers with calcium carbonate via a precipitation reaction using calcium hydroxide and carbon dioxide. In some embodiments, the reaction is accomplished by controlling the pH of pulp suspension within a desired range with the pressure or concentration of carbon dioxide to cause at least a significant proportion of the starting materials are converted to products (Abs; p 1, pars 6-22; p 2, par 45). The reaction is accomplished in one or more reactors. A fluffer can be positioned before, in or after the reactor is split the fibrous material to enlarge its surface area and optimize access of the reaction products to the fibrous material surface (p 2, pars 37-38). Thus, the fiber treatment step can occur before, during or after the loading.

The art of Doelle et al, Christian, Rheims et al and the instant invention is analogous as pertaining to the loading of fibers with calcium carbonate by a precipitation process. It would have been obvious to one of ordinary skill in the art at the time of the invention to control the pH of the suspension by regulating or controlling the carbon dioxide supply to cause the precipitation reaction to

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occur. Conversion of substantially all of the base materials to reaction products would have been an obvious goal. Since the precipitation occurs in the process of Doelle et al prior to the treatment with rotor and stator, it would have been obvious to load the fibers before feeding to the treatment unit as a functionally

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

The following Claims of the instant invention are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable:

Claims 35-44, 51-53, 56, 65-66, 68-69 and 79 over claims 1-6, 11, 13-21 of U.S. Patent No. 6355138 ,

Claims 35-41, 43, 46-54, 62, 64-66, 68-70, 72, 74 and 79-80 over claims 1-32 of U.S. Patent No. 6413365,

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Claims 35-38, 49-53 and 65-66 over claims 1-9 of U.S. Patent No. 6458241,

Claims 35-38 and 49 over claims 1 and 12 of U.S. Patent No. 6471825,

Claims 35-38 over claims 1-2 of U.S. Patent No. 6533895 ,

Claims 35-38, 40, 46-50, 62, 65 and 68 over claims 5-11 and 14-21 of U.S. Patent No. 6939438, or

Claims 35-38, 40-43 and 51-53 over claims 1-6, 9-10 and 12-19 of U.S. Patent No. 7264689,

each in view of Christian. Each of the above patents claims a continuous method of loading fibers, or at least a method that can be used in continuous fashion, with calcium carbonate via a precipitation reaction between calcium hydroxide and carbon dioxide. Christian discloses in situ precipitation of calcium carbonate in the presence of paper fibers in a tissue making process followed by immediate draining of the pulp. It would have been obvious to one of ordinary skill in the art to modify any of the above claimed fiber loading processes to operate online in a tissue making process in view of the disclosure of Christian.

The following Claims of the instant invention are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable:

Claims 35-38 and 40 over claims 1 and 14-18 of U.S. Patent Publication No. 2004/0050515,

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Claims 35-38, 40, 43, 46-50, 53, 56, 62 and 65 over claims 5-11 and 14-22 of U.S. Patent Publication No. 2004/0094277,

Claims 35-38 and 51-52 over claims 1-3 and 8-9 of U.S. Patent Publication No. 2004/0154770,

Claims 35-38, 40, 43, 46, 48, 54, 62, 67 and 69 over claims 1-22, 32 and 34 and 8-9 of U.S. Patent Publication No. 2004/0154771,

Claims 35-38, 44-45, 49, 51-52, 57-60 over claims 1-2, 4-5 and 6-17 of U.S. Patent Publication No., 2005/0000665

Claims 35-38 over claims 1 and 7 of U.S. Patent Publication No. 2005/0121157,

Claims 35-38 over claims 1 and 14-17 of U.S. Patent Publication No. 2006/0060320,

Claims 35-38, 40, 43, 46, 51-54, 57-58, 62-63, 72 and 79-80 over claims 20, 23-25, 27-30, 34-37 and 40-43 of U.S. Patent Publication No. 2007/0051480,

Claims 35-38, 40, 43, 46, 51, 53, 61-63 and 51-52 and 79-80 over claims 1-3, 6-7, 10-12 and 14-16 of U.S. Patent Publication No. 2007/0062652,

Claims 35-38, 40, 43, 62 and 79-81 and 51-52 over claims 29-30, 35-40, 43-46, 49, 52, 57-59 and 64-68 of U.S. Patent Publication No. 2007/0068640,

Claims 35-38, 40, 43-48, 62, 72 and 79-81 over claims 8, 11, 14-20, 24-28, 31-36, 41-43 and 50-51 of U.S. Patent Publication No. 2007/0119561, or

Claims 35-38, 40, 43, 46-48, 51-53, 57, 62, 72 and 79-80 over claims 19, 21-22, 26, 28-30, 35 and 41-44 of U.S. Patent Publication No. 2007/0131361

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in view of Christian. Each of the above patent publications claims a continuous method, or at least a method that can be used in continuous fashion, of loading fibers with calcium carbonate via a precipitation reaction between calcium hydroxide and carbon dioxide. Christian discloses in situ precipitation of calcium carbonate in the presence of paper fibers in a tissue making process followed by immediate draining of the pulp. It would have been obvious to one of ordinary skill in the art to modify any of the above claimed fiber loading processes to operate online in a tissue making process in view of the disclosure of Christian.

These are provisional obviousness-type double patenting rejections.

Claims 35-38, 40, 46, 72 and 81 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-9 and 14 of U.S. Patent Publication No. 2004/0149403 in view of Christian. The patent publication claims a continuous method, or at least a method that can be used in continuous fashion, of loading fibers with a filler via a precipitation reaction. Christian discloses in situ precipitation of calcium carbonate in the presence of paper fibers in a tissue making process followed by immediate draining of the pulp. It would have been obvious to one of ordinary skill in the art to modify the fiber loading process of the patent publication to load fibers with calcium carbonate, as a well known filler, online in a tissue making process in view of the disclosure of Christian.

This is a provisional obviousness-type double patenting rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Doelle (6673211, US 2002/0090332, US 2003/0010463, US 2007/0151681), Doelle et al (US 2007/0107860).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DENNIS CORDRAY whose telephone number is (571)272-8244. The examiner can normally be reached on M - F, 7:30 -4:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. C./
Examiner, Art Unit 1791

/Eric Hug/
Primary Examiner